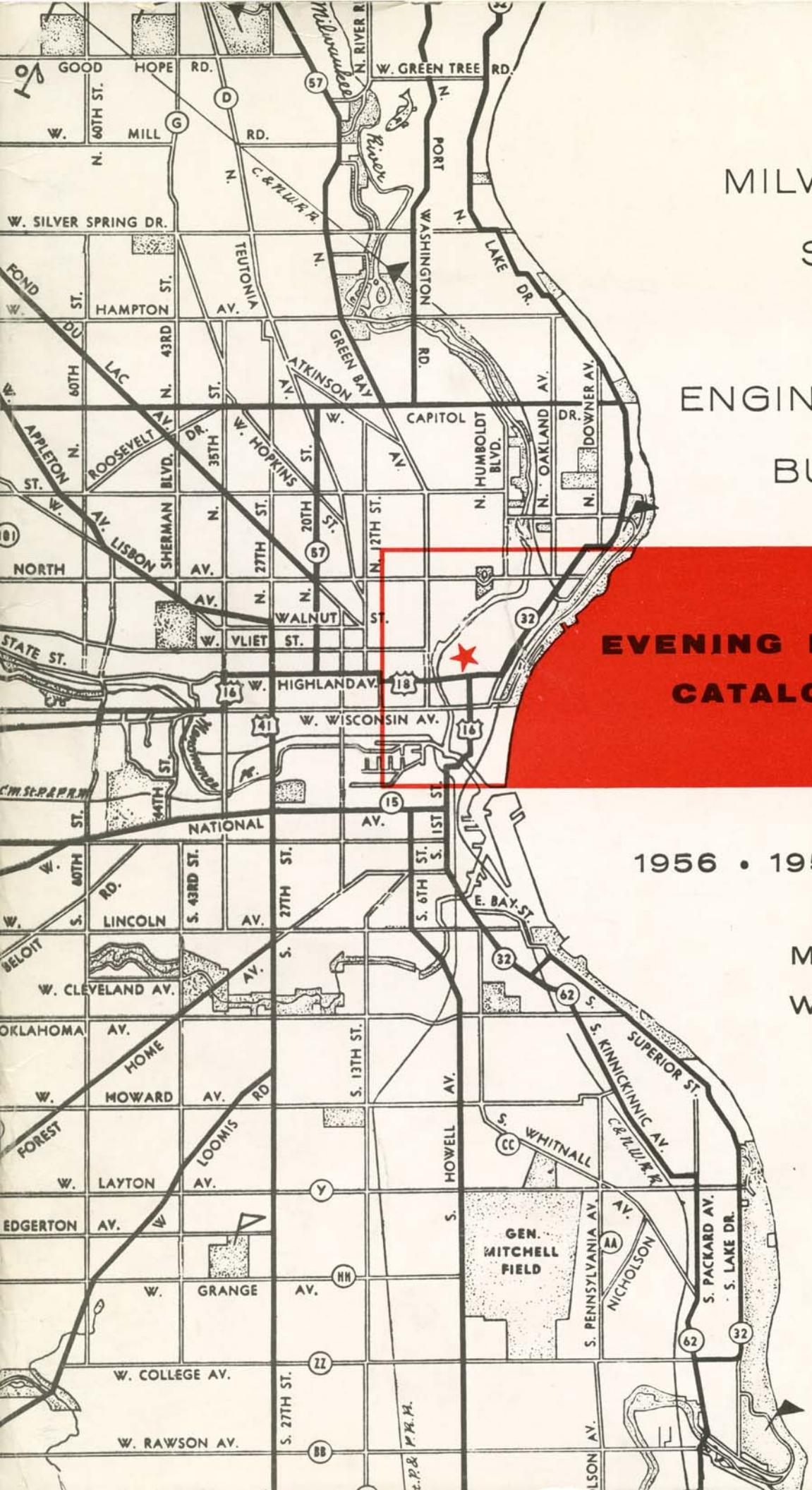


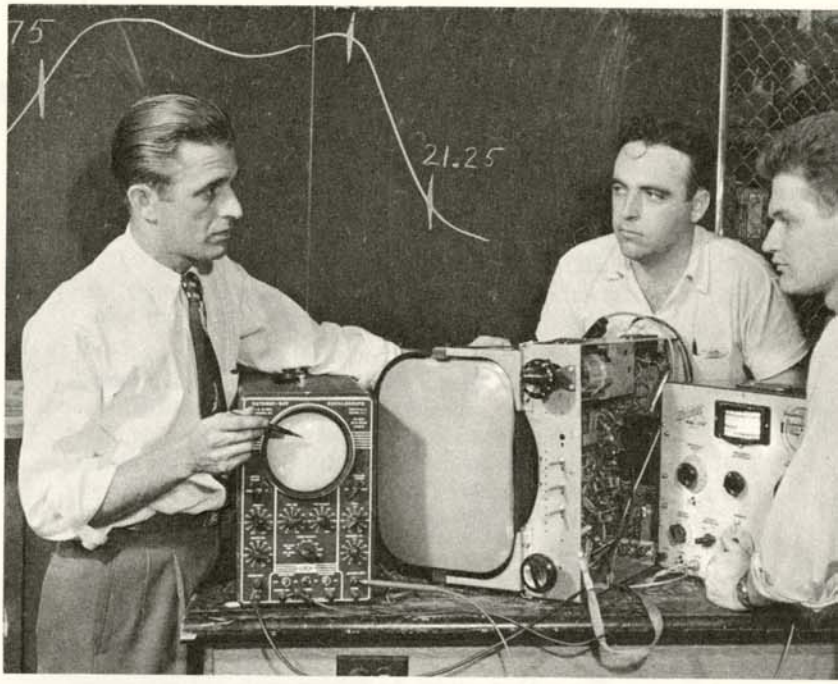
MILWAUKEE SCHOOL OF ENGINEERING BULLETIN

EVENING DIVISION CATALOG Issue

1956 • 1957 • 1958

MILWAUKEE, WISCONSIN

RADIO AND TELEVISION SERVICING



Radio and television chassis from various manufacturers are thoroughly studied and tested under the supervision of laboratory instructors.

The history of radio training at MSOE dates back to the "wireless" days of 1903, the year the School was founded. Today, with over a half-century of experience and research behind it, the curricula of the Milwaukee School of Engineering includes an extensive selection of radio, television and electronics subjects.

In the MSOE Evening Division, you may take one or more of these subjects individually or you may pursue the entire group as a course of training leading to a specific job objective. Credit hours earned from among these subjects are applicable toward the Associate in Applied Science degree.

As an MSOE Evening Division student, you will benefit from the same high caliber training which has made the MSOE Day School internationally famous. You will be taught in laboratories equipped with the most modern facilities available. Your instructors have had practical on-the-job experience in their subjects as well as training in education techniques. You will study thoroughly a complete collection of radio and television chassis from various manufacturers, working with the same types of testing equipment used in commercial shops.

These extensive experiments which you will conduct in the laboratory, together with the demonstrations and lectures in theory by your instructors, make these subjects well-rounded studies of this particular field.

Radio and Television Servicing

151 DC AND AC CIRCUITS

Two evenings a week (2½ hours per evening) for twenty weeks. Tuition — $100.00. 3½ credit hours.

Material is presented in basic electricity which will supply an adequate background in d-c and a-c fundamentals for subsequent studies. Topics included are: d-c circuits, work power and energy; batteries; magnetism and induction; alternating currents; a-c circuit solutions; power factor calculations; three phase systems; wye and delta connections; three phase power.

101 RADIO SERVICING

Two evenings a week (2½ hours per evening) for twenty weeks. Tuition — $100.00. 3½ credit hours. Prerequisite: EVE 151, or equivalent background.

This subject covers the fundamentals and procedures of radio servicing. Beginning with the study of direct current circuits, alternating current circuits, and electronic principles, the subject advances through the servicing of superheterodyne receivers. Emphasis is placed on both classroom lecture demonstrations and practical laboratory work which simulates actual radio shop practice. A complete 5 tube superheterodyne receiver is built and tested by each student. The subject qualifies students to service AM receivers. Topics included are: resonant circuits; basic tube theory; test equipment; power supply systems; audio amplifiers; RF and IF amplifiers; converters, mixers and oscillators; superheterodyne alignment; signal tracing; survey of servicing procedures.

107 COMMERCIAL RADIO AND TELEVISION LICENSE

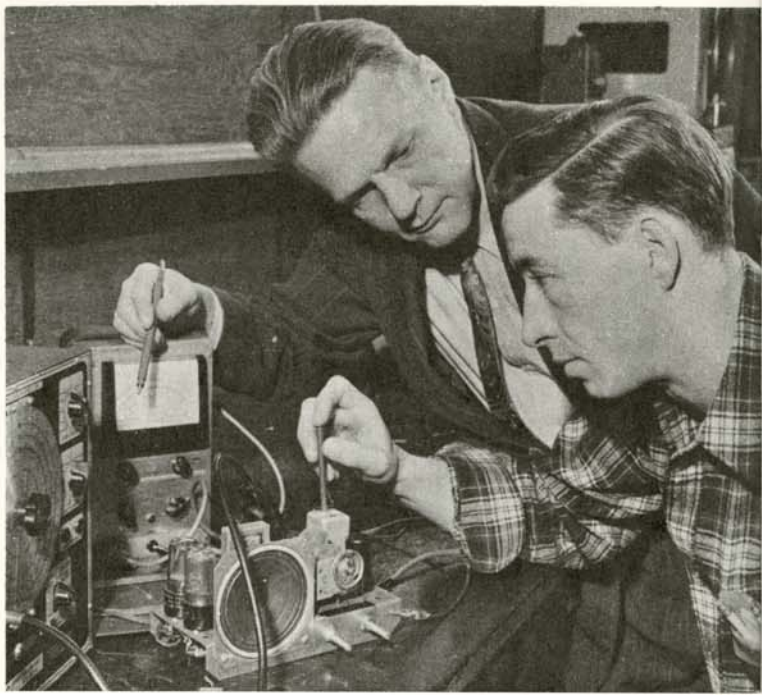
Two evenings a week (2½ hours per evening) for twenty weeks. Tuition — $100.00. 5 credit hours. Prerequisite: EVE 101, or equivalent background.

The purpose of the subject is to prepare the student for a Federal Communications Commission first class license examination. Instruction is given by lecture and classroom discussion, and is designed to present the technical information and methods necessary to solve examination problems and questions. Emphasis is placed on understanding of basic principles rather than memorization of data. The material on Elements 1, 2, 3, and 4 of the FCC commercial license examination is covered. This includes international and U.S. communications regulations; basic operating practice; basic electrical theory; practical characteristics of motors, generators, and batteries; circuit theory, tuning procedures and diagrams of AM, FM and TV transmitters and receivers. A demonstration of the tuning, operating and characteristics of a 1 kilowatt AM transmitter is included in the course.

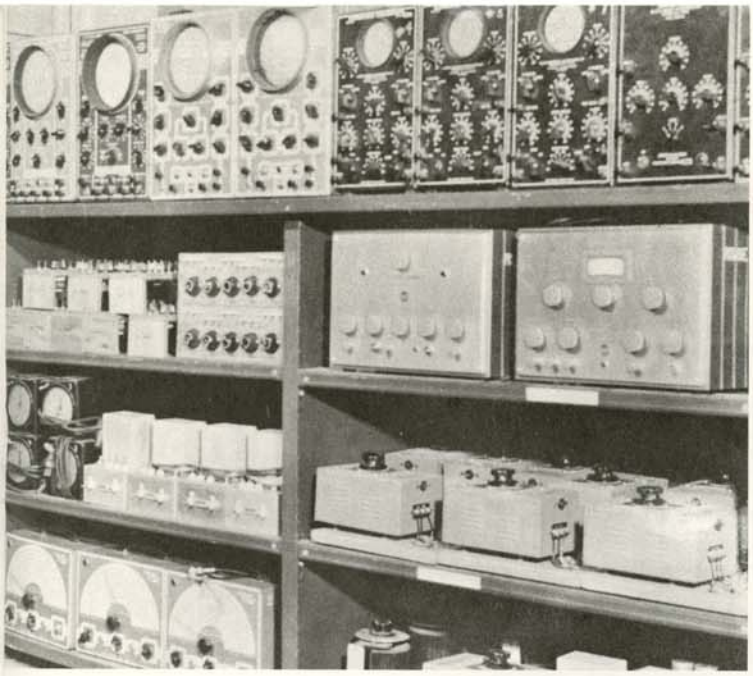
111 TELEVISION SERVICING

Two evenings a week (2½ hours per evening) for twenty weeks. Tuition — $100.00. 3½ credit hours. Prerequisite: EVE 101, or equivalent background. (Radio servicemen are qualified.)

This subject covers both the theoretical and the practical side of Frequency Modulation and Television. The study of television receivers begins with a stage by stage analysis through demonstrations and experiments. The stages are then built into a working unit. Alignment procedure is discussed and demonstrated; students analyze the symptoms, locate the difficulty and then make the repair. The circuits of most of the leading TV receivers are discussed and demonstrated.



Laboratory exercises include localizing faults and determining defective components in radio and television receivers.



Radio and Television Servicing

The radio, television, and electronics laboratories at MSOE are equipped with the most modern devices for testing and experimentation.

113 ADVANCED TELEVISION SERVICING

One evening a week (2½ hours per evening) for twenty weeks. Tuition — $50.00. 1 credit hour. Prerequisite: EVE 111, or equivalent background.

The purpose of this subject is to study special applications of television test equipment together with advanced servicing techniques. The interpretation of manufacturers' alignment procedures is covered with emphasis on short cuts and special techniques. Methods of aligning receivers without the manufacturers' data and re-alignment to improve performance for fringe area reception are studied. Emphasis is placed on the selection of proper service procedure to facilitate rapid location of defects. Special servicing techniques are covered for deflection circuits, synchronizing circuits, and video circuits, as well as servicing by signal substitution and signal tracing. Approximately 75% of the time is spent in laboratory practice with the remainder being devoted to classroom lectures and demonstrations.

115 COLOR TELEVISION SERVICING

One evening a week (2½ hours per evening) for twenty weeks. Tuition — $50.00. 2½ credit hours. Prerequisite: EVE 111, or equivalent background.

This subject covers the fundamentals of color television transmitters and color television receivers. Physics of color is studied along with the common terms used in defining color, including hue, saturation, and brightness. The production of color with primary light sources is given special attention. Considerable time is devoted to the evolution of the transmitted signal and compatibility of color reception to black and white. Commercial color television receiver circuits are studied as well as installation and servicing procedures. This subject consists mainly of classroom lectures supplemented by slides and laboratory demonstrations.

121 ULTRA-HIGH FREQUENCY TECHNIQUES

One evening a week (2½ hours per evening) for twenty weeks. Tuition — $50.00. 2½ credit hours. Prerequisite: EVE 111, or equivalent background.

The subject presents a non-mathematical approach to the study of ultra-high frequency phenomena. After mastering these principles, the student is taught the use of equipment to test and adjust systems employing such frequencies. Study includes ultra-high frequency adapters for television sets designed for very high frequency range. Additional topics include: the klystron; transmission lines in the ultra-high frequencies; wave guides; gravity resonators; ultra-high frequency antennas; ultra-high frequency measurements; wave propagation; ultra-high frequency converters.

161 APPLIED INDUSTRIAL ELECTRONICS

Two evenings a week (2½ hours per evening) for twenty weeks. Tuition — $100.00. 3½ credit hours. Prerequisite: EVE 101, or equivalent background.

This subject presents material which enables the student to install, operate, maintain and repair a wide variety of industrial electronic equipment. The essential theory of operation of vacuum and gas tubes and associated circuits required for industrial electronics is presented. Applications for vacuum and gas tubes are made for the performance of specific functions. Through demonstrations and discussions, analyses are made of the schematic diagrams of representative industrial electronic equipment. Photo electric control devices; electronic regulators; X-ray applications; electronic counters and sorters are among the devices studied.

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